

Who Creates Jobs and When: How Firms Respond to Business Cycles and Credit Conditions

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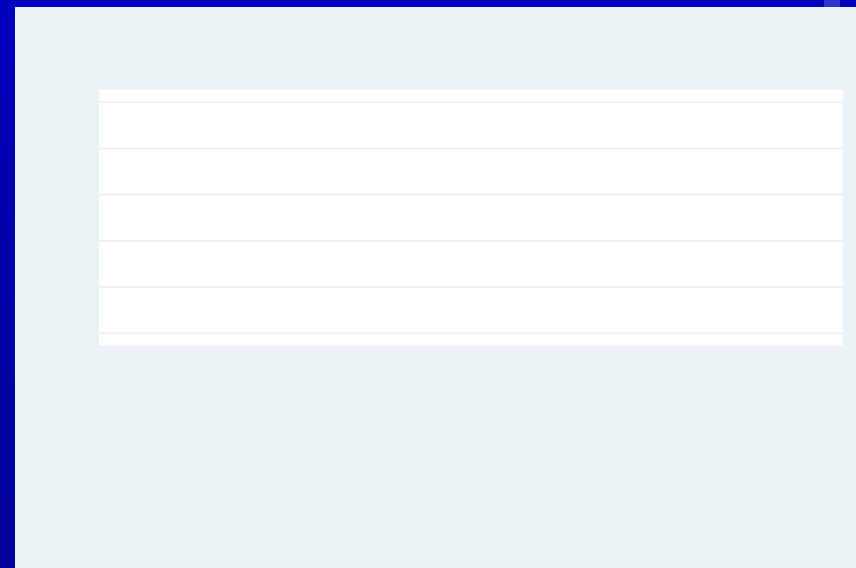
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U S C E N S U S B U R E A U

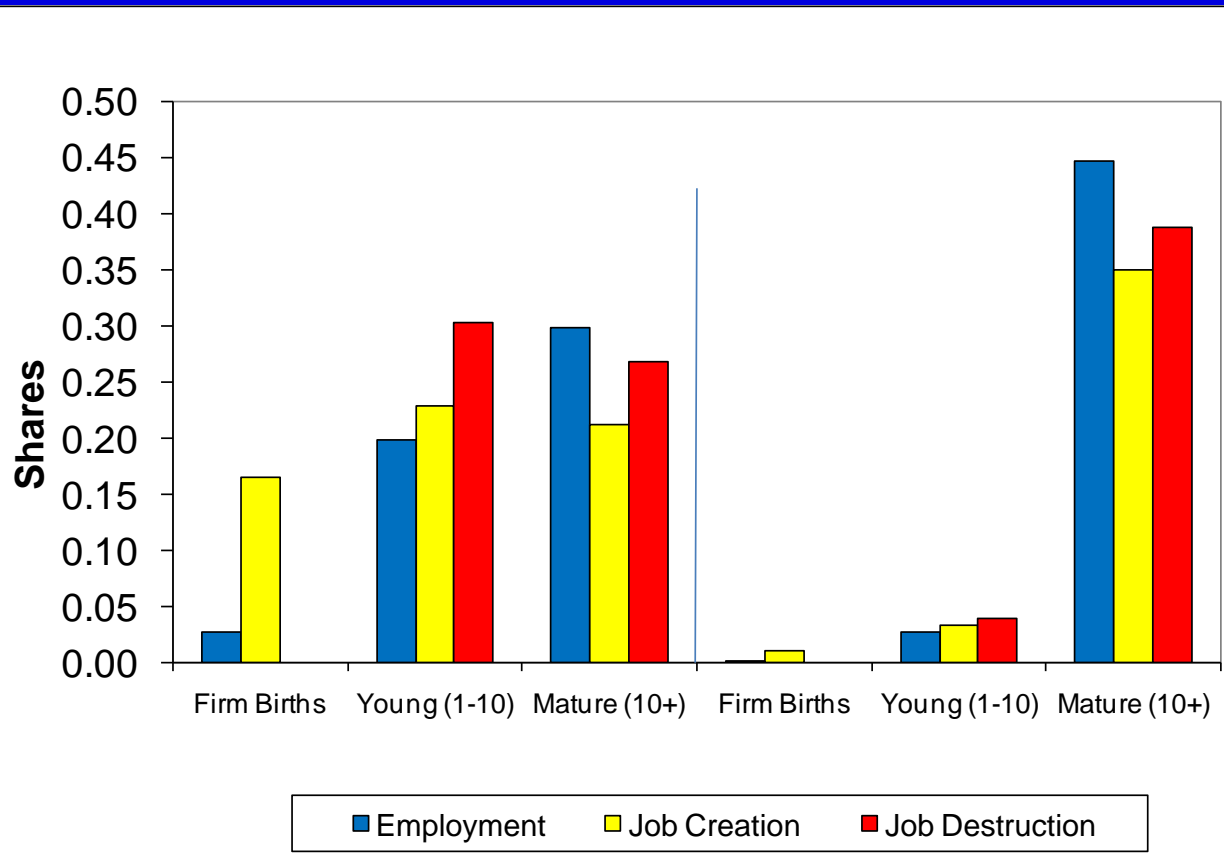
Background

- Debate on who creates jobs rages on:
“One economic adage is that small businesses generate the bulk of all U.S. jobs. It’s a rule of thumb often cited by politicians. The problem is: the truism may not be entirely true. The age of the firm—not its size—matters more.” - Kathleen Madigan, WSJ 9/10/2010
- Much of what we know is from the cross-section
- Research looking at dynamics in response to shocks is limited but necessary to inform policy. See current crisis!
- Which firms create/destroy jobs in response to business cycle and financial shocks?

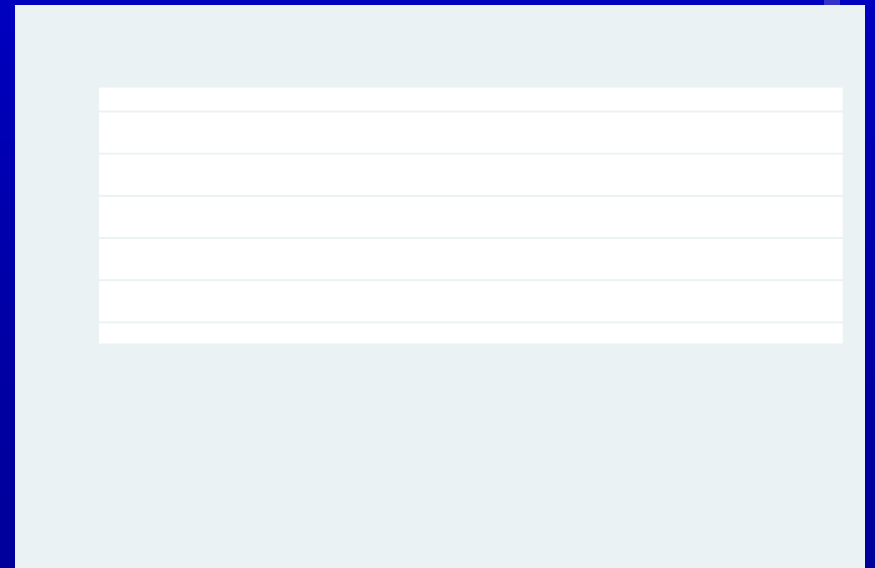
Relative Job Creation and Destruction



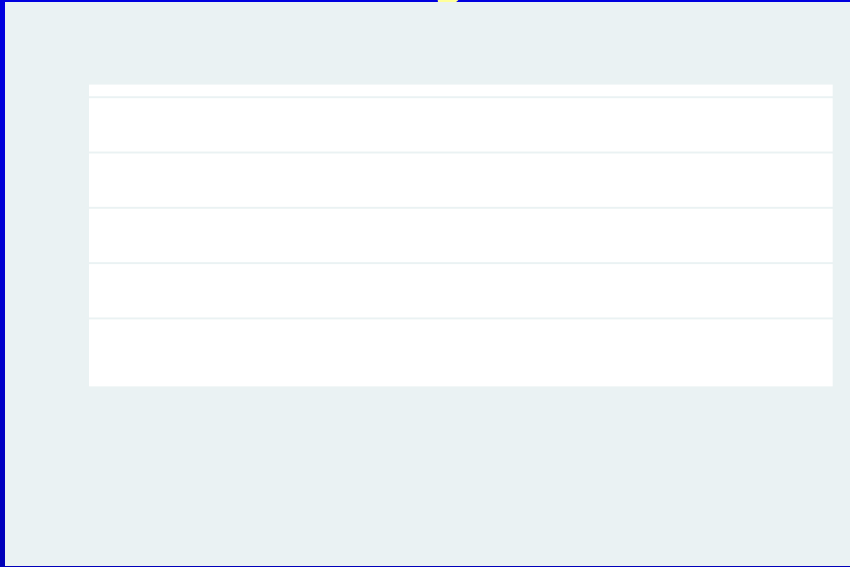
Job Creation and Destruction



Job Creation and Destruction Rates: Time Series



Job Creation and Destruction: Levels by Firm Size and Firm Age



Literature

- Job creation/destruction

Birch (1981,1987), Davis, Haltiwanger and Schuh (1996), Neumark, Wall and Zhang (2008), Haltiwanger, Jarmin and Miranda (2010), Evans (1987)...

- Business dynamics and financial and business cycle shocks

Davis, Haltiwanger and Schuh (1996), Gertler and Gilchrist (1994) Sharpe (1994), Chari, Christiano and Kehoe (2007), Moscarini and Postel-Vinay (2009), Mueller (2009)

- Small business finance

Mishkin (2008), Mach and Wolken (2003), Robb and Wolken (2003)

- Large business finance

Philippon (2008), Gilchrist, Yankov and Zakrajsek (2008), Mueller (2009)...

Our Contribution

- We use rich microdata covering the whole economy and multiple recessions to:
 - Examine dynamics of startups, young, small and large firm job creation and destruction
 - Examine their sensitivity in response to both business cycle and financial shocks in the same framework
 - Measure both firm size and firm age effects
(young firms are small but small firms are not necessarily young)

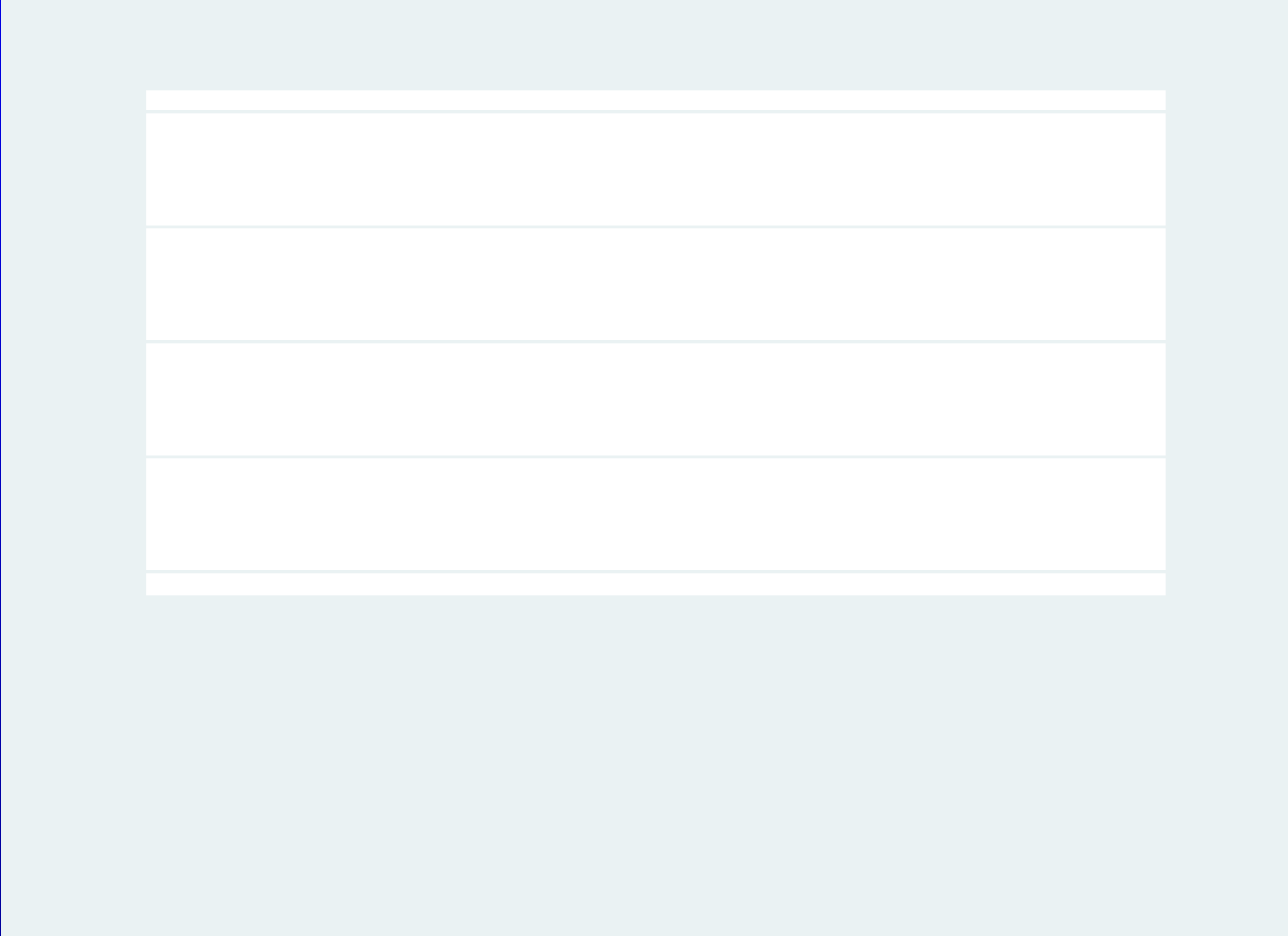
Data: Measuring shocks

- Business cycle measure
 - Unemployment Rate (BLS CPS March 12 emp)
- Financial Shocks

Large and small/young resort to different financial mechanisms

 - Credit Card Rates (FRB consumer credit data)
 - Housing Prices (FHFA)
 - Corporate Spread (ML High Yield-Moody's AAA)
- **Caveat: We are not identifying exogenous shocks at this point.**

Different Shocks and Timing



Different Shocks and Timing

Data: The LBD

- Census confidential files from BR
 - Coverage 1976-2008(9)
 - CBP Universe
 - Establishment level with firm characteristics
 - Focus on both business and employment dynamics
- Unique Features
 - Long Time Series
 - Firm and Establishment Age
 - Interactions with Firm and Establishment Size

The LBD: Continued

- Statistics
 - Establishment Births, Deaths and Continuers
 - Job creation
 - From births and expansions
 - Job destruction
 - From deaths and contractions
 - Excess Job Reallocation
- By categories
 - Firm Age
 - Firm Size
 - Industrial Sector

Methodology

- Employment-weighted regressions
- Establishment-level with firm characteristics
- Non-parametric Firm Size and Firm Age
 - Yields within cell employment-weighted means by firm size and age classes
- Three specifications:
 - Size or Age but not both, one cyclical variable
 - Size + Age, all cyclical variables
 - Size + Age, all cyclical variables, industry*year
- With Size+Age, use conditional distributions of other characteristic

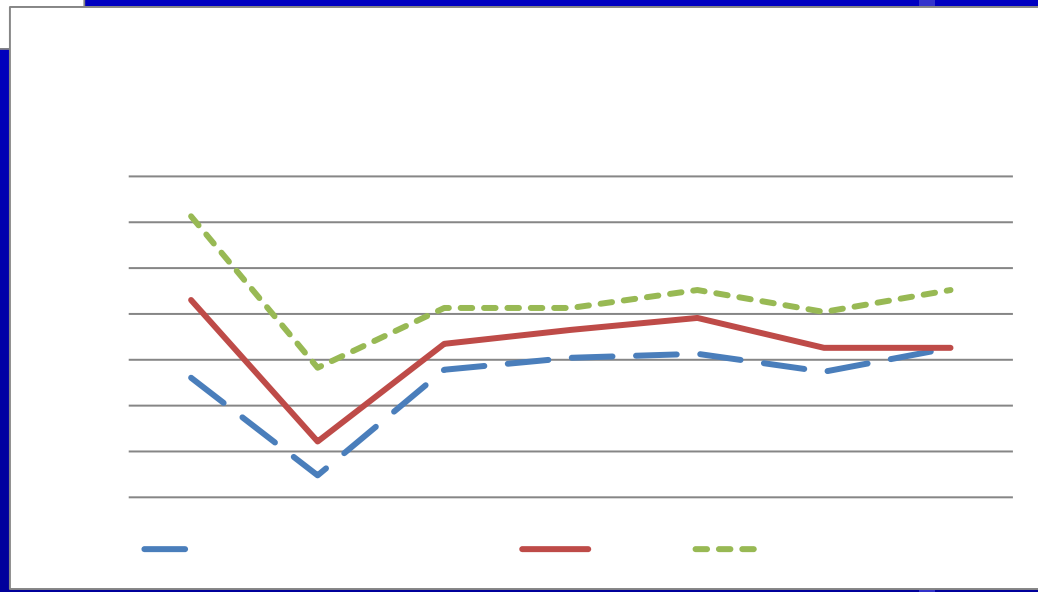
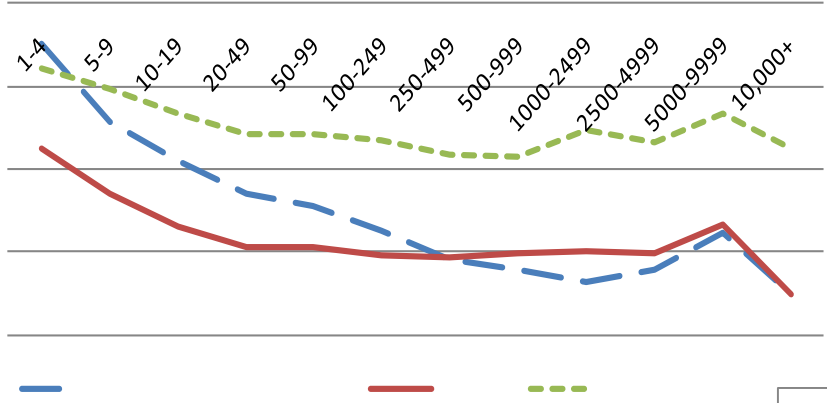
Regression Model (for Size+age, all cyclical variables)

$$y_{it} = \beta_1 S_{s(it)} + \beta_2 A_{a(it)} + \beta_3 X_t + \beta_4 X_t S_{s(it)} + \beta_5 X_t A_{a(it)} + \beta_6 I_{z(i)} + \epsilon_{it} \quad (1)$$

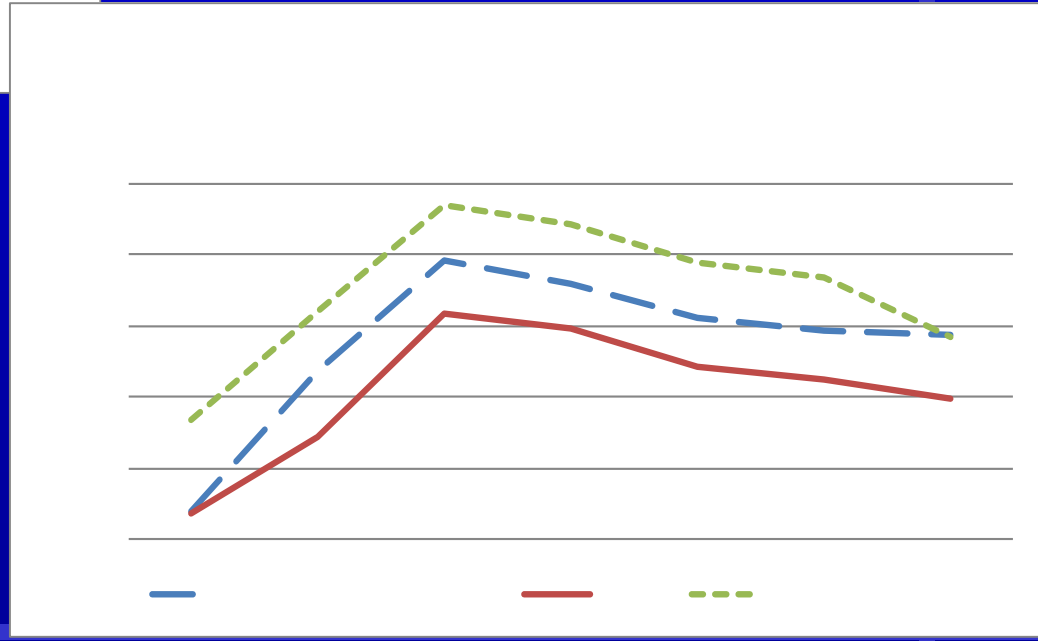
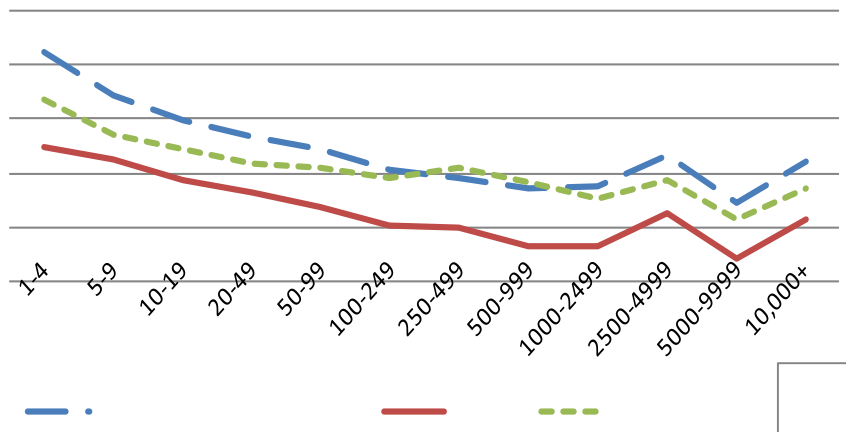
Where

- y_{it} is the net job creation of establishment i at time t
- $S_{s(it)}$ is the matrix of size dummies associated with plant i at time t
- $A_{a(it)}$ is the vector of a firm age dummies associated with plant i at time t
- X_t is a matrix of time varying business cycle and Financial market characteristics
- $\beta_4 X_t S_{s(it)}$ is a matrix time varying business cycle and Financial market characteristics interacted with size dummies
- $\beta_5 X_t A_{a(it)}$ is a matrix time varying business cycle and Financial market characteristics interacted with age dummies
- $I_{z(i)}$ is the matrix of industry dummies
- ϵ_{it} is the statistical residual of the net job creation experienced by plant i at time t

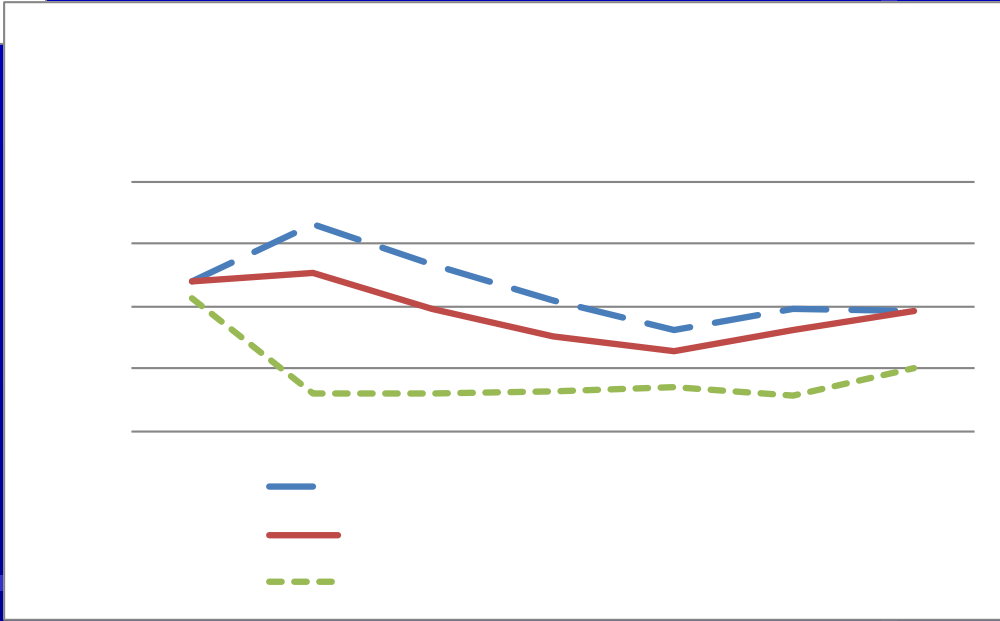
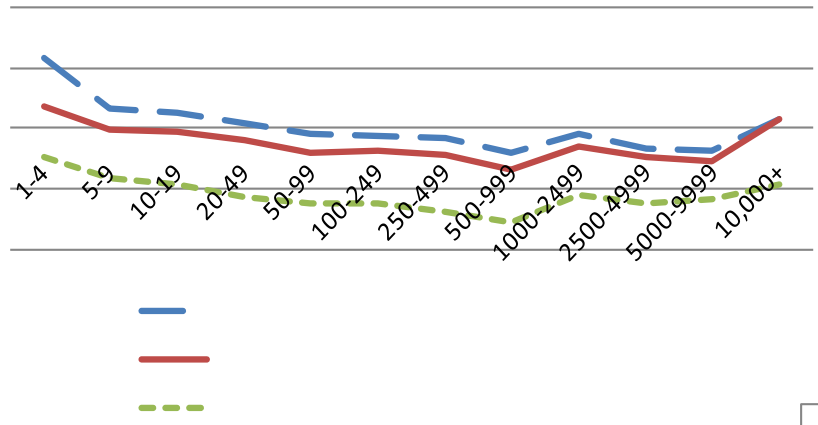
Business Cycle



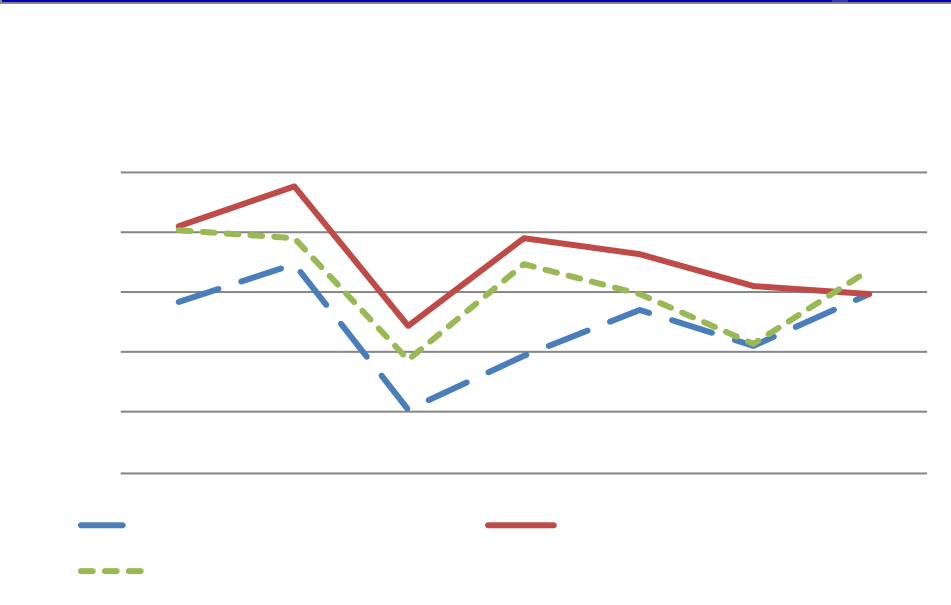
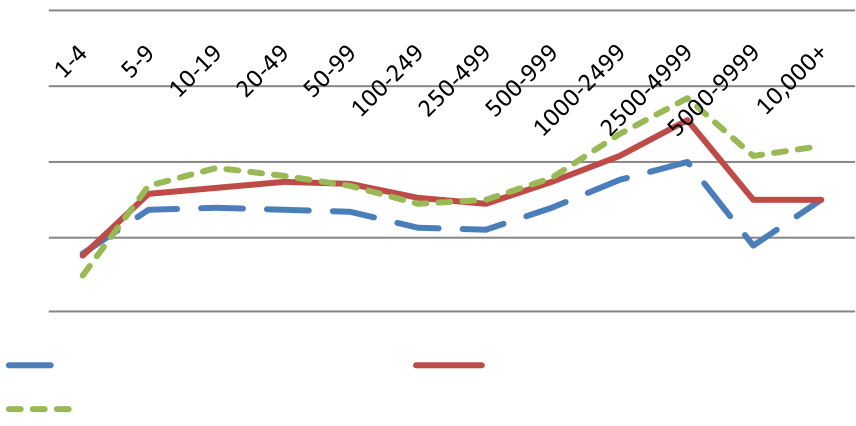
Home Prices



Corporate Spread



Credit Cards



Summary

- Very preliminary at this point but find
 - Differential response to impulses from firms of different size and age
 - Type of impulse matters
 - Young/Small firms sensitive to housing prices and credit card rates
 - Large firms very cyclically sensitive to aggregate conditions
 - Medium size firms relatively sensitive to corporate credit spreads

Summary

- Next steps:
 - Apparent that important to look at different impulses and examine size/age patterns separately
 - Need to put more structure on analysis for identification (e.g, panel VAR?).